



AF/3725
DOCKET NO. K-1859
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: GARY J. CONDON
Serial No. 10/067,021
Filing Date: February 4, 2002
For: ROLL CRUSHER TEETH HAVING HARD COMPACT MATERIAL INSERTS
GROUP ART UNIT: 3725
CONFIRMATION NO. 4194
EXAMINER: Mark Rosenbaum

MAIL STOP APPEAL BRIEF-PATENTS
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

RECEIVED
DEC 31 2003
TECHNOLOGY CENTER R3700
December 19, 2003

Sir: TRANSMITTAL SHEET

1. Transmitted herewith is an Appeal Brief in the above-identified application. Enclosed is:

☒ Notice of Appeal from the Primary Examiner to the Board of Patent Appeals and Interferences (Large Entity), in duplicate

☒ Transmittal of Appeal Brief (Large Entity), in duplicate

☒ Appeal Brief in response to Office Action Mailed August 21, 2003, in triplicate

2. Applicant is other than a small entity.

3. The proceedings herein are for a patent application and the provisions of 37 CFR §1.136 apply. Applicant petitions for an extension of one (1) month. Charge the fee for the one-month extension of \$110.00 to Deposit Account No. 502832.

4. Fees:

Notice of Appeal:	\$330.00
Transmittal of Appeal Brief:	\$330.00
One (1) Month Extension:	\$110.00

5. Charge to Deposit Account No. 502832

Total Amount: \$ 770.00

A duplicate copy of this letter is enclosed.

The Commissioner is hereby authorized to charge any additional fees included in 37 CFR 1.16 and 1.17 which may be required, or credit any overpayment, to said Deposit Account.

Kevin P. Weldon

Date: December 19, 2003

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Mail Stop Appeal Brief-Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on December 19, 2003, by Kevin P. Weldon, Registered Representative.

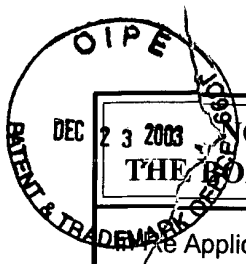
Kevin P. Weldon

Date: December 19, 2003

K1859\ekn\3353tran

12/30/2003 MDANTE1 00000097 502832 10067021

03 FC:1251 110.00 DA



**NOTICE OF APPEAL FROM THE PRIMARY EXAMINER TO
THE BOARD OF PATENT APPEALS AND INTERFERENCES (Large Entity)**

Docket No.
K-1859

Patent Application Of: **GARY J. CONDON**

Serial No.	Filing Date	Examiner	Group Art Unit
10/067,021	February 4, 2002	Mark Rosenbaum	3725

Invention: **ROLL CRUSHER TEETH HAVING HARD COMPACT MATERIAL INSERTS**

TO THE COMMISSIONER FOR PATENTS:

Applicant(s) hereby appeal(s) to the Board of Patent Appeals and Interferences from the decision of the Primary Examiner dated **August 21, 2003** finally rejecting Claim(s) **1 through 22**

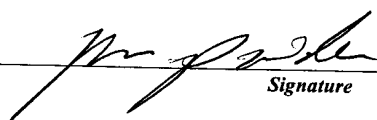
RECEIVED
DEC 31 2003
TECHNOLOGY CENTER R3700

The fee for this Notice of Appeal is: **\$330.00**

- ☐ A check in the amount of the fee is enclosed.
- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **502832**

12/30/2003 MDANTE1 00000097 502832 10067021

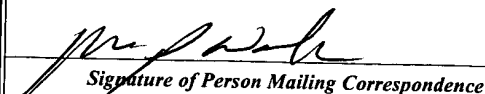
01 FC:1401 330.00 DA


Signature

Dated: **December 19, 2003**

Kevin P. Weldon
Reg. No. 47,307
Kennametal Inc.
P. O. Box 231
1600 Technology Way
Latrobe, PA 15650-0231
Phone: 724-539-3848
Fax: 724-539-5903

I certify that this document and fee is being deposited
on **December 19, 2003** with the U.S. Postal Service as
first class mail under 37 C.F.R. 1.8 and is addressed to the
Commissioner for Patents, P.O. Box 1450, Alexandria, VA
22313-1450.


Signature of Person Mailing Correspondence

Kevin P. Weldon

Typed or Printed Name of Person Mailing Correspondence

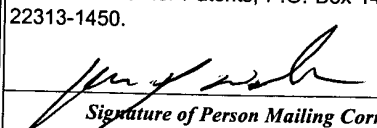
CC:

**TRANSMITTAL OF APPEAL BRIEF (Large Entity)**Docket No.
K-1859In Re Application Of: **GARY J. CONDON**Serial No.
10/067,021Filing Date
February 4, 2002Examiner
Mark RosenbaumGroup Art Unit
3725Invention: **ROLL CRUSHER TEETH HAVING HARD COMPACT MATERIAL INSERTS****TO THE COMMISSIONER FOR PATENTS:**

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

The fee for filing this Appeal Brief is: **\$330.00**

- ☐ A check in the amount of the fee is enclosed.
- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. **502832**

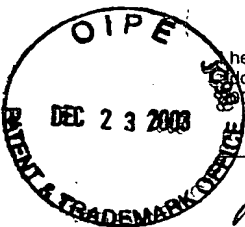
RECEIVED
DEC 31 2003
TECHNOLOGY CENTER R3700
SignatureDated: **December 19, 2003****Kevin P. Weldon**
Reg. No. 47,307
Kennametal Inc.
P. O. Box 231
1600 Technology Way
Latrobe, PA 15650-0231
Phone: 724-539-3848
Fax: 724-539-5903I certify that this document and fee is being deposited on **December 19, 2003** with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
Signature of Person Mailing Correspondence**Kevin P. Weldon**

Typed or Printed Name of Person Mailing Correspondence

CC:

CERTIFICATE OF MAILING BY FIRST-CLASS MAIL

I hereby certify that this correspondence is being deposited with the United States Postal Service via First-Class Mail, in an envelope addressed to Mail Stop Appeal Brief-Patents, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on December 19, 2003, by Kevin P. Weldon, Registered Representative.



[Signature]
Kevin P. Weldon

Date: December 19, 2003

[Handwritten mark]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re: Application of:)
GARY J. CONDON) Group Art Unit 3725
Serial No. 10/067,021) Examiner:
Filed: February 4, 2002) Mark Rosenbaum
For: ROLL CRUSHER TEETH HAVING)
HARD COMPACT MATERIAL)
INSERTS) December 19, 2003

MAIL STOP APPEAL BRIEF-PATENTS
COMMISSIONER FOR PATENTS
P. O. BOX 1450
ALEXANDRIA, VA 22313-1450

APPEAL BRIEF

(1) Real Party in Interest

The rights to the above-identified patent application have been assigned by the inventor to Kennametal Inc., having its principal place of business located at 1600 Technology Way, P.O. Box 231, Latrobe, PA 15650-0231.

(2) Related Appeals and Interferences

There are no related appeals or interferences to the application identified above.

(3) Status of Claims

Claims 1-22 are pending in the application.
Claims 1-22 are rejected.

(4) Status of Amendments

A Final Rejection was mailed August 21, 2003. No amendments have been filed by applicant subsequent to the Final Rejection.

(5) Summary of Invention

The invention is an improved design for teeth on a material/rock crusher assembly. The teeth have an improved design that when it is exposed to material flows during operation of the crusher, it will increase the wear life of the teeth. Hard abrasive resistant compact inserts are located and integrally formed within the body of the teeth. The improvement in wear resistance reduces the frequency of roller tooth maintenance, limiting down-time expenses and the cost of replacement teeth.

(6) Issues

Whether claims 5 and 13 are rejected under 35 USC 112 second paragraph as being indefinite.

Whether claims 10, 11, 14 and 17-19 are anticipated by Davenport (6,094,795) under 35 USC 102 (b).

Whether claims 12, 13, 15 and 16 are unpatentable over Davenport under 35 USC 103 (a).

Whether claims 1-22 are unpatentable over Kottman under 35 USC 103 (a).

Whether claims 1-22 are unpatentable over the admitted prior art (APA) in view of Davenport under 35 USC 103 (a).

(7) Grouping of Claims

Claims 1-6 and 20 are grouped together in terms of their patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claims 7-9 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claims 10-14 and 18 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claims 15-17 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claim 19 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claim 21 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claim 22 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) in view of Kottman.

Claims 1-4, 6, 10-12, 14 and 18-22 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) over the admitted prior art (APA) in view of Davenport.

Claims 5 and 13 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) over the APA in view of Davenport.

Claims 7-9 and 15-17 should be considered separately in terms of its patentability over the outstanding rejection under 35 USC 103 (a) over the admitted prior art (APA) in view of Davenport.

Claims 10, 11, 14 and 17-19 should be considered separately in terms of their patentability over the outstanding rejection under 35 USC 102(b) as being anticipated by Davenport.

Claims 12 should be considered separately in terms of their patentability over the outstanding rejection under 35 USC 103 (a) in view of Davenport.

Claims 13 should be considered separately in terms of their patentability over the outstanding rejection under 35 USC 103 (a) in view of Davenport.

Claims 15 and 16 should be considered separately in terms of their patentability over the outstanding rejection under 35 USC 103 (a) in view of Davenport.

Claims 5 and 13 should be considered separately in terms of their patentability over the outstanding rejection under 35 USC 112 second paragraph.

(8) Argument

35 USC 112

The applicant does not agree with the Examiner's position taken in the outstanding rejections, and does not believe that all of the claimed limitations in either claims 1-22 are disclosed, taught or suggested by the applied prior art.

35 USC 112

The Examiner has rejected claims 5 and 13 under 35 USC 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter. The Examiner declared that "It is not clear how these claims further structurally limit the claims they depend upon." It is respectfully submitted that both claims 5 and 13 particularly point out and distinctly claim applicant's invention. Further, with

respect to 35 USC 112, paragraph four, claims 5 and 13 further limit the subject matter claimed. Claim 5 depends on claim 4 and recites that:

"said teeth are formed by casting, said casting includes first placing said compact inserts in a mold and then pouring a molten metal into the mold."

A product, such as a crusher, can be claimed by the process from which it is made. See *In re Bridgeford*, 357 F.2d 679, 149 USPQ 55 (CCPA 1966). A product defined by a method of manufacturing claim is still a product claim. In this instance, claim 5, by defining the method that is employed to manufacture the crusher, further limits the scope of claim 4 since the crusher recited in claim 4 could alternatively have been made by a different method. Claim 5 recites that the crusher tooth is made by integrally casting hard inserts therein; this is a much more specific invention than recited in claim 4. There is no limitation on the manufacturing method employed to make the crusher recited in claim 4.

35 USC 102(b)

Claims 10, 11, 14 and 17-19 stand rejected under 35 USC 102(b) as being anticipated by figure 1 in Davenport. For a proper rejection under 35 USC 102(b), each and every limitation recited in the claims must be disclosed in the prior art.

Claim 10 recites a crusher tooth body, wherein said tooth body includes at least one compact insert of hard wear resistant composition. Davenport discloses a shredder tooth body 22 wherein a replaceable piece of carbide 24 is attached to the tooth body through the "use of screws, bolts, or solder." The tooth disclosed in Figures 1 and 2 is not a crusher tooth as this term is understood in the art. The top surface of the tooth in Davenport is not designed to pulverize and crush material. The rejection under 35 USC 102 is improper because Davenport does not disclose a crusher tooth.

35 USC 103 (a)

Claims 12, 13, 15 and 16 are rejected under 103(a) as being unpatentable over Davenport. Claim 12 recites that the tooth top surface and leading surface both have at least one compact insert of hard wear resistant composition. The Examiner, in the body of the rejection, states that the "limitation of the claims would have been obvious design choices only once the basic apparatus was known."

The embodiments shown in Davenport disclose teeth fixed to a rotary drum that mesh with a static support anvil 80. The anvil has hard material inserts 74, the intermeshing between the teeth and anvil results in the waste material being sheared, see column 1 lines 15-56. The top surface of the tooth does not provide any of this shearing action, only the edges on the lead surface cut material. Upon inspection of the tooth body embodiment shown in Figures 1 and 2, there is no hard material insert positioned on the top surface of the tooth body. There is an aperture 26 that is matched to accommodate a bolt 10 for attaching the tooth to the crusher drum 50. The bolt head is not subjected to significant wear; otherwise the bolt head would be destroyed and an operator would be unable to remove the bolt to replace a worn out tooth. There is no insert positioned on the top surface of the tooth body that is made from a hard wear resistant composition. The top surface on the tooth in Davenport does not cut the material and therefore is not prone to accelerated wear like the leading surface. It is firmly believed by the applicant that there would have been no motivation to modify Davenport to have a hard insert positioned on the top surface of the tooth since no wear problem is acknowledged in Davenport or believed to exist. The examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify Davenport under

35 USC 103 in order to establish a *prima facie* case of obviousness.

In column 2 line 54- column 3 line 12, the Davenport patent discloses the benefits and ease in replacing a damaged/worn tooth that is connected to the drum 50 by only a single bolt. If Davenport was modified to have a hard insert on the top surface of the tooth, this hard insert would interfere with attachment of the tooth to the drum with a bolt. Such a modification would destroy the advantage of quick tooth replacement explicitly disclosed in the Davenport patent. The Davenport patent teaches away from such a modification. It is firmly believed by the applicant that there would have been no motivation to modify Davenport to have a hard insert positioned on the top surface of the tooth since no wear problem is acknowledged in Davenport or believed to exist. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify Davenport under 35 USC 103 in order to establish a *prima facie* case of obviousness.

Claim 13 recites that the hard insert is integrally cast into the tooth. Davenport discloses a tooth body 22 wherein a replaceable piece of carbide 24 is attached to the tooth body through the "use of screws, bolts, or solder," see column 8 lines 1-4. The hard insert plate at 24, in column 8 line 13 of Davenport is referred to as being replaceable. Such attachment methods as welding, screws and solder are suitable means accommodating a quick replacement of the carbide plate 24 onto the tooth. This teaches away from casting an insert into a crusher tooth which is permanent and not suitable for easy replacement of hard inserts. The Davenport patent teaches away from manufacturing a crusher tooth with hard inserts by a casting method.

Claims 15 and 16 both recite that the compact insert extends beyond the height of the exposed surfaces of the body. As shown in figure 2 of Davenport, the hard plate 24 in Davenport does not extend beyond the top

surface of the tooth and is recessed with respect to at least a portion of the lead surface. There is no suggestion in Davenport to extend the height of the hard plate 24 beyond the tooth body surface. The references do not provide any motivation, implicitly or explicitly to modify the inserts in Davenport to extend beyond the exposed surfaces of the tooth body therein. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify Davenport under 35 USC 103 in order to establish a *prima facie* case of obviousness.

Claims 1-22 are rejected under 103(a) as being unpatentable over Kottman. The Examiner, in the body of the Final Rejection, states:

"See paper number 3 from this rejection. Furthermore, the omission of elements and their function e.g. trailing insert does not result in patentable subject matter. Also, the tooth bodies of Kottman are considered to be attached to the tooth carriers in an integral manner."

It should first be pointed out that in paper number 3 to which the Examiner makes reference to, claims 1-22 were not rejected under 103(a) as being unpatentable over Kottman. Only claims 1-17 were pending. Claims 1-3, 6, 10, 11, 13 and 14 were rejected under 35 USC 102(b) as being anticipated by Kottman; only claims 4, 5, 7-9, 12 and 15-17 were rejected as being unpatentable over Kottman under 35 USC 103 (a). Further the Examiner's remark, see above, that the tooth bodies of Kottman are considered to be attached to the tooth carriers in an integral manner suggest that applicant is continuing to apply the Kottman reference to claims 1-3, 6, 10, 11, 13 and 14 under 35 USC 102(b) since both independent claims 1 and 10 were amended to recite:

"wherein each of said plurality of said teeth have a bottom that is attached to each of said rolling drums;"

The Kottman patent neither discloses teeth with a bottom that is attached to the rolling drums nor would

it have been obvious to provide separate teeth having a bottom for attachment to rolling drums. The specification does not disclose the teeth as having a bottom that is attached to Kottman's shafts 3,4. As illustrated in figures 3 and 4 in Kottman, many carriers 13 are connected to the shafts. Each carrier is identified as having heads 14,21,22. There are four heads integrally formed as part of the carrier. The carrier has a central opening that is adapted to receive the crusher shaft. The entire carrier is attached to the shafts. The teeth 14,21,22 in Kottman do not have a bottom that is attached to each crusher drum. This is in contrast to the claimed invention recited in claim 1, wherein each of the teeth include a bottom for attachment to the drum. Kottman does not disclose each and every limitation recited in claim 1 as required for a proper rejection under 35 USC 102(b). The Examiner's declaration that the teeth heads are considered to be attached to the tooth carrier in an integral manner is a contradiction. If a unitary piece has different identifiable features that are in fact just a portion of an integral monolithic member, such a feature is just a portion of the unitary member, not a distinct separable element. The integral tooth portion of the carrier does not have a distinct identifiable bottom surface as recited in claims 1, 10, 22 and 22. Further, with regard to claim 1, claim 1 recites that the teeth are attached to the rolling drums, not "to the tooth carrier" as stated by the Examiner in the rejection.

The clearing plates 15 are described as being easily connected to the heads 21,22 of the carriers 13 in Kottman. The carriers in Kottman are connected to the shaft by welds 25. If the clearing plates 15 become worn, another plate is easily substituted onto the tool head 13. If a carrier 13 becomes damaged, another carrier can be substituted therein. The components 15 that are subjected to the most wear during operation are already designed for easy replacement. There would have been no motivation for an artisan to modify Kottman to include teeth that have a

bottom that is directly welded to the shaft in Kottman. Such a tooth having a bottom that is attached to the drum (shaft) in Kottman would preclude the need for a carrier. This suggested modification would be a nearly complete reconstruction of the Kottman comminuting apparatus. An artisan in view of Kottman itself, see column 1 lines 10-13 would not be motivated to construct the comminuting apparatus as other than a slow crusher with disc-like tool carriers useful for crushing wood, refuse and other breakable waste, see column 1 lines 1-13. The Examiner is using impermissible hindsight in modifying Kottman and failed to establish a *prima facie* case of obviousness under 35 USC 103.

With respect to claims 7-9 and 15-17, the compact inserts are recited as extending beyond the surface of the exposed surfaces. The Kottman patents disclose that the clearing devices 15 do not exceed the radial height of the tool heads 21,22(teeth). See column 2 lines 54-65. Each tool head on a carrier is explicitly designed to have a different radial height to provide for a preferred variance of the peripheral speeds of the tool heads resulting in desirable tearing of the work material. To modify Kottman to have compact inserts that extend beyond the surface of the teeth in Kottman would destroy Kottman's described intentional design of outer spheres 30,31 of action formed by the cooperation of the outer radial tips of the teeth body in Kottman. Kottman has explicit language that would teach away from modifying Kottman as proposed by the Examiner to meet the limitations of 7-9 and 15-17. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify Kottman under 35 USC 103 in order to establish a *prima facie* case of obviousness.

Claims 19 and 21 have also been rejected under 35 USC 103(b) as being obvious over Kottman. Claims 19 and 21 each recite a crusher tooth having a trailing surface that "does not include at least one compact insert." The leading and trailing surface of the teeth

have hard material insert plates at 17 and 19 (figure 3) attached thereto. The Examiner believes that the omission of elements and their function such as a trailing insert does not result in patentable subject matter. The Kottman patent includes this wear insert to limit the amount of wear on the trailing surface of the tooth. To eliminate this wear insert on the trailing surface would defeat its suggested intended purpose by Kottman, to reduce wear to the trailing surface. Kottman teaches away from eliminating the insert from the trailing surface; inherently, without the wear insert, the trailing surface of the tooth would have accelerated wear and the Kottman communicating apparatus would require repair and maintenance much sooner, an undesirable result. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify Kottman's trailing surface under 35 USC 103 in order to establish a *prima facie* case of obviousness.

The rejection of claims 1-22 as being unpatentable under 25 USC 103(b) over the admitted prior art (APA), in view of Davenport, is improper. The APA is rock crusher technology and Davenport is nonanalogous shredder technology. The hard insert in Davenport is for the purpose of shearing material (e.g., paper), not pulverizing materials as the APA. It is believed that in this industry, it is only necessary to have wear resistant shearing edges along the leading face of the tooth in Davenport. The other surfaces of the tooth body in Davenport are not subjected to the abrasion and wear related to shearing of the materials. As is disclosed throughout Davenport, only the hard insert on each tooth body and anvil are replaced, see column 8 lines 1-5, column 11 lines 44-50, column 12 lines 27-31, column 12 lines 65-67, column 15 lines 5-12 and column 16 lines 22-29. These inserts are disclosed as being attached by screws or silver solder. The tooth body is only replaced when it is desirable to change the configuration of the shredder as appropriate for shredding different materials and/or to

achieve different particles. The bolt allows for the teeth to be changed rapidly, see column 2 lines 15-38 and column 3 lines 13-51. The teeth are replaceable and can be configured so that the material is shredded into triangular or square shaped particles, for instance. The Examiner's statements that "The use of integral teeth results in increased maintenance costs due to replacement costs. Davenport solves this problem by disclosing a similar apparatus including the use of replaceable tooth bodies with inserts" is inaccurate. The teeth in Davenport are designed to be replaceable so that a basic shredder machine can be reconfigured "as a fine rotary shredder, coarse rotary shredder, conventional shear shredder, or granulator all by simply changing anvil and rotor components" Column 2 lines 43-54. The replaceable teeth limit the labor required to reconfigure existing shredders, see column 2 lines 15-30. The Davenport replaceable tooth solves the problem of required teeth reconfiguration for different shredding applications, not replacement/maintenance of worn teeth. Davenport discloses a need in the industry for easily replaceable teeth so that the shredder can be used to make different particle sizes, column 2 lines 20-25. There is no suggestion in Davenport to construct the tooth in the APA to be replaceable. Davenport teaches to replace only the portion of a tooth that is subjected to wear. An artisan, in view of this teaching, would not modify the entire tooth in the APA to be replaceable. The APA has no inserts thereon and therefore all the teachings set forth in Davenport regarding insert replacement are inapplicable to the APA.

The surfaces of the tooth are hardfaced in the APA. Davenport employs a bolt 10 to connect the tooth to the shredder drum. Such a bolt, while appropriate for connecting the tooth to a drum on a shredder if positioned on the top surface of a crusher tooth would be subjected to significant wear and quickly lose its shape and the operator would not be able to remove the bolt/tooth.

There is no suggestion or teaching in Davenport to modify the APA. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify the APA, in view of Davenport under 35 USC 103 in order to establish a *prima facie* case of obviousness.

With respect to claims 7-9 and 15-17, the compact inserts are recited as extending beyond the surface of the exposed surfaces. Claims 7-9 and 15-17 recite that the compact insert extends beyond the height of the exposed surfaces of the body. As shown in figure 2 of Davenport, the hard plate 24 in Davenport does not extend beyond the top surface of the tooth and is recessed with respect to at least a portion of the lead surface. There is no suggestion in Davenport to extend the height of the hard plate 24 beyond the tooth body surface. The references do not provide any motivation, implicitly or explicitly to modify the APA to extend beyond the exposed surfaces of the tooth body therein. The Examiner is using impermissible hindsight and has failed to demonstrate proper motivation to modify APA, in view of Davenport under 35 USC 103 in order to establish a *prima facie* case of obviousness.

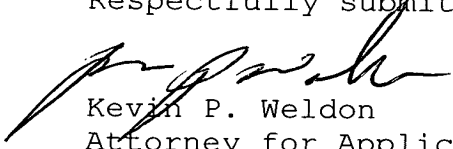
Claims 5 and 13 recites that the hard insert is integrally cast into the tooth. Hardfacing as disclosed in the APA is applied by electro-welding and is often times done in the field. Davenport discloses a tooth body 22 wherein a replaceable piece of carbide 24 that is attached to the tooth body through the "use of screws, bolts, or solder," see column 8 lines 1-4. The hard insert plate at 24, in column 8 line 13 of Davenport is referred to as being replaceable. Such attachment methods as welding, screws and solder are suitable means for simplifying replacement of the carbide plate 24 onto the tooth. This teaches away from casting an insert into a crusher tooth which is of a more permanent nature not suitable for easy replacement of hard inserts. The Davenport patent teaches away from manufacturing a crusher tooth with hard inserts by a casting method.

In view of the arguments outlined above, it is respectfully submitted that claims 1, 2 and 5 be allowed. Thus, applicant respectfully requests a Notice of Allowance indicating claims 1, 2 and 5 as being allowable. If for any reason, the Examiner does not believe that the application is in condition for allowance, the Examiner is requested to telephone applicant with any comments or questions (724-539-3848) in order to expedite prosecution of the application.

The Commissioner is hereby authorized to charge any fees, including additional filing fees required under 37 CFR 1.16 and 1.17, in connection with this submission to Kennametal Inc. corporate Deposit Account 502832.

Respectfully submitted,

Kennametal Inc.
P.O. Box 231
Latrobe, PA 15650



Kevin P. Weldon
Attorney for Applicant(s)
Registration No. 47,307
Phone: 724-539-3848
Date: December 19, 2003

K1859\ekn\3352appealbrief

(9) Appendix

1. (Previously Amended) A crusher comprising:

a framed housing;

a pair of rolling drums for rotation about parallel axes and at a predetermined spacing from each other to define between them a throat, said throat having a width and a length;

each said rolling drum carrying a plurality of radially projecting longitudinally extending teeth, said teeth projecting radially to at least a part of the of the width of said throat;

wherein each of said plurality of said teeth have a bottom that is attached to each of said rolling drums;

motor means connected to rotate said rolling drums in timed synchronous fashion but in opposite directions, the teeth of the opposed rolling drums being in register so as to pass through said throat; and

a directing means for directing rock into said throat to be fractured by said rotating teeth into fragments of a size sufficiently small to pass between said rolling drums.

2. (Original) A crusher as claimed in claim 1 wherein each of said teeth include at least one compact insert of hard wear resistant composition.

3. (Original) A crusher as claimed in claim 1 wherein each of said teeth has a top surface and leading working surface.

4. (Original) A crusher as claimed in claim 3 wherein both said top surface and said leading working surface have at least one compact insert of hard wear resistant composition.

5. (Original) A crusher as claimed in claim 4 wherein said teeth are formed by casting, said casting includes first placing said compact inserts in a mold and then pouring a molten metal into the mold.

6. (Original) A crusher as claimed in claim 1 wherein said teeth have at least one exposed surface and each of said teeth include at least one compact insert having a hard wear resistant composition.

7. (Original) A crusher as claimed in claim 6 wherein the compact insert extends to a height greater than 3 mm beyond the exposed surfaces of the tooth.

8. (Original) A crusher as claimed in claim 6 wherein the compact insert extends to a height beyond the exposed surfaces of the tooth within the range of 3-8 mm.

9. (Original) A crusher as claimed in claim 6 wherein the compact insert extends to a height less than 9 mm beyond the exposed surfaces of the tooth.

10. (Previously Amended) A crusher tooth comprising:

a tooth body,

said tooth body having a top surface and bottom surface, said bottom surface adapted for attachment to a rolling drum,

wherein said tooth body includes at least one compact insert of hard wear resistant composition.

11. (Currently Amended) A crusher as claimed in claim 10 wherein said tooth body has a [top surface and] leading working surface.

12. (Original) A crusher as claimed in claim 11 wherein both said top surface and said leading

working surface have at least one compact insert of hard wear resistant composition.

13. (Original) A crusher as claimed in claim 10 wherein said tooth is formed by casting, said casting includes first placing said compact inserts in a mold and then pouring a molten metal into the mold.

14. (Original) A crusher as claimed in claim 10 wherein said tooth has at least one exposed surface and said tooth includes at least one compact insert having a hard wear resistant composition.

15. (Original) A crusher as claimed in claim 14 wherein the compact insert extends to a height greater than 3 mm beyond the exposed surfaces of the tooth.

16. (Original) A crusher as claimed in claim 14 wherein the compact insert extends to a height beyond the exposed surfaces of the tooth within the range of 3-8 mm.

17. (Original) A crusher as claimed in claim 14 wherein the compact insert extends to a height less than 9 mm beyond the exposed surfaces of the tooth.

18. (Previously Added) A crusher as claimed in claim 14 wherein said tooth body further comprises a trailing surface.

19. (Previously Added) A crusher as claimed in claim 18 said trailing surface does not include at least one compact insert.

20. (Previously Added) A crusher comprising:
a framed housing;
a pair of rolling drums for rotation about parallel axes;

each said rolling drum carrying a plurality of radially projecting longitudinally extending teeth,

wherein each of said plurality of said teeth have a bottom surface that is attached to each of said rolling drums.

21. (Previously Added) A crusher comprising:

a framed housing;

a pair of rolling drums for rotation about parallel axes;

each said rolling drum carrying a plurality of radially projecting longitudinally extending teeth,

each of said plurality of said teeth have a trailing surface and leading surface,

wherein said leading surface includes at least one compact insert of hard wear resistant composition and said trailing surface does not include at least one compact insert.

22. (Previously Added) A crusher as claimed in claim 21 wherein said tooth has a bottom surface, said bottom surface is attached to each of said rolling drums.